COLORADO
Department of Public
Health & Environment

Dedicated to protecting and improving the health and environment of the people of Colorado

5/9/16

Ozone Data Managers,

The Colorado Department of Public Health and Environment (CDPHE), Air Pollution Control Division (APCD) is currently evaluating calendar year 2015 ambient ozone data for potential stratospheric ozone intrusion events, and wildfire smoke events that may be considered for Exceptional Event status as defined by the Code of Federal Regulations (CFR) Title 40 Parts 50 and 51. The APCD has identified nine stratospheric intrusion events and nine wildfire smoke events in 2015, of which, three intrusion events and two smoke events appear to have significantly affected at least one of the following Colorado based federally operated ozone monitors: Fairplay (BLM), Rangely (BLM), Gothic (CASTNET), Rocky Mountain National Park (NPS), and Rocky Mountain National Park (CASTNET).

The Exceptional Event Rule (EER) was published March 22, 2007 and became effective May 21, 2007. The EER allows the ambient air quality data which is submitted to AQS and used in making regulatory decisions, to be, in some cases, flagged and, where appropriate, excluded from calculations in determining whether or not an area has attained the standard. As these Federal and/or Tribal operated ozone analyzers are, or may be designated as, regulatory analyzers, Colorado will be held liable for making National Ambient Air Quality Standards (NAAQS) determinations from data collected by these analyzers. The data flagged as "exceptional" must have been affected by an exceptional event, which is defined as an event that affects air quality, is not reasonably controllable or preventable, is an event caused by human activity that is unlikely to recur at a particular location or a natural event, and is determined by the EPA, in accordance with 40 CFR 50.14, to be an exceptional event. The reporting agency has until July 1st of the year following the year in which the measurement occurred to flag the suspect measurement and add an initial description of the exceptional event. Subsequently, the responsible regulatory agency has up to 3 years from the time of the event to conduct analysis, prepare justification and submit documentation for EPA consideration of concurrence. Ultimately, only flagged events that are in excess of the current design values will be considered for justification documentation.

The following are date ranges from Federally operated ozone monitoring sites, identified by the APCD, that have been influenced by a stratospheric ozone intrusion event or wildfire smoke and should be appropriately flagged in AQS with an "RO" (Stratospheric Ozone Intrusion) or "RT" (Wildfire-U.S.) qualifier code and be associated with an AQS defined stratospheric intrusion or wildfire event. The APCD does not have the AQS screening group clearance to add qualifier codes to data collected at Federal air monitoring sites, and requests that the Federal agencies operating these monitors flag these data on behalf of the APCD by June 30th, 2016.

Stratospheric Ozone Intrusion Events ("RO" Request Exclusion Flag)

4/17/15 Event

Gothic	*(08-051-9991)*	*4/17/15, hour 9*	*to*	*4/17/15, hour 20*
Fairplay	*(08-093-0002)*	*4/17/15, hour 11*	*to*	*4/18/15, hour 0*

6/8/15 Event

Rocky Mtn. National Park	*(08-069-0007)*	*6/8/15, hour 11*	*to*	*6/8/15, hour 18*
Rocky Mtn. National Park	*(08-069-9991)*	*6/8/15, hour 11*	*to*	*6/8/15, hour 18*
Rangely	*(08-103-0006)*	*6/8/15, hour 11*	*to*	*6/8/15, hour 20*

6/9/15 Event

Rocky Mtn. National Park	*(08-069-0007)*	*6/9/15, hour 7*	*to*	*6/9/15, hour 18*
Rocky Mtn. National Park	*(08-069-9991)*	*6/9/15, hour 7*	*to*	*6/9/15, hour 19*
Rangely	*(08-103-0006)*	*6/9/15, hour 11*	*to*	*6/9/15, hour 19*

Wildfire Smoke Events ("RT" Request Exclusion Flag)

8/24/15 Event

Rocky Mtn. National Park	*(08-069-0007)*	*8/24/15, hour 13*	*to*	*8/24/15, hour 23*
Rocky Mtn. National Park	*(08-069-9991)*	*8/24/15, hour 13*	*to*	*8/24/15, hour 23*

8/29/15 Event

Rocky Mtn. National Park	*(08-069-0007)*	*8/29/15, hour 14*	*to*	*8/29/15, hour 22*
Rocky Mtn. National Park	*(08-069-9991)*	*8/29/15, hour 14*	*to*	*8/29/15, hour 22*

Stratospheric ozone intrusion and wildfire smoke events are forecasted and documented by the APCD meteorologist for public advisories. Once an event is verified and data is validated, all 1 hour average data associated with the forward looking 8 hour averages in excess of 70 ppb are flagged with an RO or RT qualifier code in AQS, additional 1 hour data points occurring prior to the 1 hour points associated with 8 hour averages in excess of 70 ppb may be identified to further clarify the start of the event. Data from Federally operated ozone monitors were obtained from AQS and evaluated using the same criteria as APCD data. The above listed data are a result of that evaluation. Please note that for all events in Rocky Mountain National Park the CASTNET analyzer reported higher values that exceeded the 70 ppb 8 hr average threshold used in this analysis while the National Park Service analyzer only exceeded this threshold for two of the four events (6/9/15 and 8/24/15). For consistency between the two sites we are requesting that data be flagged for both sites for the same time periods, as identified by the site with the longest event time interval.

To keep event descriptions consistent within AQS and in accordance with EPA guidance (https://www.epa.gov/sites/production/files/2015-09/documents/exceptional_events.pdf), the APCD has used the below language to individually define the above mentioned events in AQS. It is recommended that other agencies use similar language when defining the above mentioned events in AQS.

AQS Event Description

Qualifier Code: "RO" (Stratospheric Ozone Intrusion) or "RT" (Wildfire Smoke- U.S.)

Event Description:

"Stratospheric Ozone Intrusion Event - <*Event Start Date*> - Colorado APCD Investigation"

Or

"Wildfire Smoke Ozone Event - <*Event Start Date*> - Colorado APCD Investigation"

Event Start Date: Beginning date of effected data (YYYYMMDD)

Event End Date: Ending date of effected data (YYYYMMDD)

Comments: (for individual events)

Comment for 4/17/15 Event (Stratospheric Intrusion - "RO"):
"An intense upper level low pressure system produced tropospheric folding over Colorado, particularly over higher elevation sites in central and western parts of the state. The highest impacts occurred at the Fairplay and Gothic monitors."

Comment for 6/8/15 Event (Stratospheric Intrusion – "RO"):
"In the wake of a strong upper level trough, an intrusion of tropospheric ozone occurred along the Front Range region of Colorado during the morning hours which had a significant influence on the 8-hour maximum ozone concentrations later in the day. Surface ozone concentrations in western Colorado were also elevated due to residual tropospheric ozone created by intrusions the previous two days."

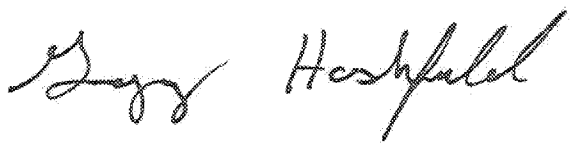
Comment for 6/9/15 Event (Stratospheric Intrusion – "RO"):
"Significant amounts of residual tropospheric ozone remained in place across the state from the multiple intrusions that had occurred over the previous several days. Surface ozone concentrations were elevated statewide."

Comment for 8/24/15 Event (Wildfire Smoke – "RT"):
"Heavy smoke produced from fires to the west of Colorado, especially in northern California, may have contributed to elevated ozone in central and eastern Colorado, including all Front Range monitors and RMNP."

Comment for 8/29/15 Event (Wildfire Smoke – "RT"):
"Extensive smoke transported from fires in Washington, Oregon, Idaho and Montana may have contributed to elevated ozone throughout the Front Range region. Ozone was particularly elevated at monitors in Ft. Collins (West) and Rocky Mountain National Park."

The APCD appreciates your consideration and any assistance you can provide in adding stratospheric ozone intrusion and wildfire qualifier codes to the above listed data. Please feel free to contact me with questions or comments.

Regards,



Gregory Harshfield
Colorado Department of Public Health and Environment
APCD-TS-B1
4300 Cherry Creek Drive South
Denver, CO 80246
gregory.harshfield@state.co.us
303-692-3232

cc:

Richard Payton	EPA Region 8
Timothy Sharac	EPA/CASTNET
Ed Rumbold	BLM
John Vimont	NPS
Barkley Sive	NPS
Joe Adlhoch	ARS
Jessica Ward	ARS

Mark Tigges	ARS
Christopher Rogers	AMEC
Marcus Stewart	AMEC
Gordon Pierce	CDPHE/APCD
Scott Landes	CDPHE/APCD
Cindy Wike	CDPHE/APCD
Lisa Devore	CDPHE/APCD